CLAIMS

The invention claimed is:

1. A method of communicating information, the method comprising:

encoding information into one or more variable length low density parity check (LDPC) codewords.

2. The method of claim 1 wherein encoding information into one or more variable length LDPC codewords comprises:

selecting a parity check matrix from a plurality of different sized matrices, the selected parity check matrix having a size corresponding to a size of information to be encoded.

3. The method of claim 1 wherein encoding information into one or more variable length LDPC codewords comprises:

adjusting a size of a default parity check matrix by at least one of puncturing one or more parity bits or deleting one or more information bits of the default parity check matrix.

4. The method of claim 3 wherein deleting one or more information bits comprises:

deleting one or more columns of the default parity check matrix.

5. The method of claim 4 wherein deleting one or more columns includes selecting the one or more columns having a lowest bit weight.

6. The method of claim 1 further comprising:

transmitting the one or more variable length codewords via an air interface using orthogonal frequency division multiplexing (OFDM).

7. The method of claim 1 further comprising:

sending one or more of the variable length codewords to a network device, wherein the network device comprises a wireless local area network (WLAN) access point (AP).

8. The method of claim 1 further comprising sending one or more of the variable length codewords to a network device wherein the network device comprises a mobile device.

9. A method of communicating information, the method comprising:

receiving one or more variable length low density parity check (LDPC) codewords from a network device; and

decoding the one or more variable length LDPC codewords.

10. The method of claim 9 wherein decoding the one or more variable length LDPC codewords comprises:

decoding a codeword based on a parity check matrix having a size corresponding to a length of the codeword.

11. The method of claim 9 wherein decoding the one or more variable length LDPC codewords comprises:

decoding a codeword based on a parity check matrix having at least one of punctured parity bits or deleted information bits.

12. A device configured to encode information into varying length low density parity check (LDPC) codewords using different sized parity check matrices.

13. The device of claim 12 wherein the different sized parity check matrices are selected from a memory based on a length of information to encode in each codeword.

14. The device of claim 12 wherein the different sized parity check matrices are derived from a default matrix by at least one of puncturing one or more parity bits or deleting one or more information bits of the default matrix.

15. The device of claim 14 wherein deleting one or more information bits comprises deleting one or more matrix columns have a lowest bit weight.

16. The device of claim 12 wherein the device comprises a wireless mobile device.

17. The device of claim 12 wherein the device comprises a wireless network access station.

18. The device of claim 12 wherein the device comprises a network adaptor.

19. The device of claim 12 wherein the device comprises an encoder.

20. The device of claim 12 comprising:

    a transceiver;

    a digital processing portion coupled to the transceiver; and

    an antenna coupled to the transceiver.

21. A device configured to decode varying length low density parity check (LDPC) codewords of a received block code using different sized parity check matrices.

22. The device of claim 21 wherein the different sized parity check matrices are selected from a memory based on a length of each codeword.

23. The device of claim 21 wherein the different sized parity check matrices are derived from a default matrix by at least one of puncturing one or more parity bits or deleting one or more information bits.

24. The device of claim 21 wherein the device comprises one of a mobile device, a network access station or a network adaptor.

25. A communication system comprising:

a radio frequency (RF) transceiver; and

an encoder communicatively coupled to the RF transceiver and adapted to encode information into one or more variable length low density parity check (LDPC) codewords.

26. The communication system of claim 25 wherein the encoder is adapted to encode variable length LDPC codewords using a parity check matrix having a size corresponding to a length of information for each codeword.

27. The communication system of claim 26 wherein the parity check matrix is selected from one of a plurality of stored matrices having different sizes.

28. The communication system of claim 26 wherein the size of the parity check matrix is adjusted by at least one of puncturing parity bits or deleting information bits of a default sized parity check matrix.

29. The system of claim 25 wherein the communication system comprises a wireless local area network (WLAN) access point (AP).

30. The communication system of claim 18 further comprising one or more antennas coupled to the RF transceiver.